

# **Iterative solution methods for variational inequalities with nonlinear main operator and constraints to gradient of solution**

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## **Abstract**

Convergence of the preconditioned Uzawa-type and Arrow-Hurwitz-type iterative methods for nonlinear finite dimensional constrained saddle point problems is investigated. The general results are applied to the finite element approximation of a variational inequality with nonlinear main operator and constraints to gradient of solution. © 2012 Pleiades Publishing, Ltd.

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## **Keywords**

constrained saddle-point problem, finite element approximation, inclusion, iterative methods